

Claim Objections

Claims 10 and 14-17 are objected to as being dependent on a rejected base claim. Applicants respectfully urge that the objection is moot in view of the remarks below. Applicants urge withdrawal of all objections.

Claim Rejections - 35 U.S.C. 103

Claims 1-3, 12, 13, 23, 24 and 27 are rejected under 35 U.S.C. 103(a) as being obvious over Klug et al.

Applicants respectfully disagree. Applicants note that the Patent Office appears to be of the opinion that Klug et al. teaches azeotropic or near azeotropic compositions comprising a hydrofluoroether and a hydrofluorocarbon and that such compositions can be used as blowing agents (See page 3 of Office Action). However, Applicants wish to again emphasize that the technical problem addressed by the claimed invention is not the finding of azeotropic compositions that could be used as blowing agents, but rather the providing of azeotropic compositions that could be used as CFC 11 substitutes in the technical field of foaming. That is, with the present invention CFC 11 is no longer required, since the compositions of the claimed invention are replacements for CFC 11. In this way, the processes of the claimed invention are able to provide for drop in substitutes for CFC 11, that do not require any modification of the conditions typically used to produce foams with CFC 11. In addition, it should be noted that foams obtained in the claimed invention have the same or near the same physical properties as do foams obtained with CFC 11. The case *In re Papesch*, 315 F2d 381 (CCPA 1963) is on

point. This case notes that the patentability of a product must be viewed in terms of any unexpected differences obtained in the invention, as compared to the closest prior art

Applicants urge that no invention as claimed is taught or suggested by any prior art including Klug et al. Applicants have demonstrated in the Declaration of Dr. Giampiero Basile, submitted with the Response dated December 5, 2002, that Klug et al. teaches azeotropic compositions that cannot be used as substitutes as CFC 11. For instance, Applicants point to Examples 6-7 as indicated at Table 2 of the Declaration, wherein the hydrofluoroethers and hydrofluorocarbons of the Examples are set forth in the Table at page 3 of the Declaration. As demonstrated in the Declaration, the compositions of Examples 6-7 do not produce foams when tested under those conditions where CFC 11 produces fully expanded foams. In fact, Klug et al. is entirely lacking with respect to any teaching or suggestion concerning the technical problem of substitutes for CFC 11, in particular as addressed by the claimed invention.

With further reference to the Declaration, Applicants also wish to point out that other compositions of Klug et al., for example the compositions of Examples 1-2 (See Table 2 (foam properties) and the Table at page 3), when tested under those conditions typical for CFC 11 production of fully expanded foams, do not have the same physical characteristics as the foams obtained with CFC 11. In fact, such foams display a higher density and a much too coarse cell size distribution (See Table 2 of Declaration). Moreover, in Klug et al. it is also possible to find compositions that, when tested under the same conditions that CFC 11 produces fully expanded foams, instead provide foams having quite high densities and that do not expand completely (See Examples 3-5 of Declaration).

Therefore, in order to obtain a reliable comparison between the tested compositions and the experiments set forth in the Declaration, Applicants have found it necessary to use the same quantities of blowing agents. Even though it is stated at page 4 of the Office Action that it is not required that blowing agents be used in the same molar quantities as CFC 11 to be substitutes for CFC 11, it is important to note that blowing properties such as expansion volume depend, as is known by those of ordinary skill in the art, on the actual moles of gas. Applicants thus point out that it has not been determined whether in Examples 3-5 of the Declaration fully expanded foams may be obtained by adding further amounts of blowing agent, as appears to be alleged at page 3 of the Office Action. Yet, even assuming for sake of argument that it would be possible to control foam density by adjusting the amount of blowing agent, in view of the Declaration the following must be acknowledged:

- 1) Although a foam may fully expand, this does not mean that the foam attains the same physical characteristics of CFC 11 expanded foams; and
- 2) Although Examples 1-2 of the Declaration demonstrate that blowing agents of Klug et al. may produce fully expanded foams, the resulting physical properties are quite different from CFC expanded foams as well as the blowing agent compositions of the claimed invention (See Example γ in Table 2 of Declaration).

It is noted that in order to achieve the lowest possible density with the experimental conditions, in the Declaration the time of each experiment was prolonged until completion of the crosslinking reaction and maximum expansion of the foam (See bottom of page 2 of the Declaration). Therefore, Applicants again remark that as seen with Examples 6-7, it is simply untenable that foam density could have been controlled simply by adjusting characteristics such as the amount of blowing agent. Those of

ordinary skill in the art recognize that if a foam composition does not expand under certain experimental conditions, such as those conditions where CFC 11 provides for fully expanded foams, the composition will not further expand where the amount of blowing agent is adjusted. Quite simply, foam formation is dependent on intrinsic properties rather than the amount of blowing agent. Accordingly, Klug et al. clearly lacks any teaching or suggestion with respect to those compositions that might be used as CFC 11 substitutes, as required by the claimed invention.

Also, Applicants would like to point out that those of ordinary skill in the art, concerned with the technical problem of CFC 11 substitutes, would not have considered the teachings of Klug et al., since the reference contains no disclosure concerning the technical problem, much less any specific teaching or suggestion that would be considered relevant. In other words, the disclosure of Klug et al. would be considered irrelevant with respect to the technical problem of CFC 11 substitutes as addressed by the claimed invention. Yet, in order to better address the comments of the Office Action, the experiments of the Declaration have been performed so as to better understand the mixtures of Klug et al. and in particular their certain features:

- 1) The mixtures of Klug et al. are not substitutes for CFC 11, since the mixtures are not blowing agents under those conditions where CFC 11 produces foams; and
- 2) Where the mixtures may act as blowing agents, the resulting foams have physical properties quite different from CFC 11 produced foams.

In fact, it is to be noted that the Patent Office has been unable to indicate any disclosure of Klug et al. concerning the technical problem of CFC 11 substitutes, much less this technical problem as addressed by the claimed invention.

Applicants note that it is alleged at page 3 of the Office Action that although the Declaration includes two Examples where the foam does not expand, this does not amount to the preponderance of evidence required to rebut a patent's presumption of operability. However, Applicants wish to make clear that the Declaration was not intended to demonstrate that the compositions of Klug et al. are inoperative. Instead, the Declaration demonstrates that Klug et al. does not address by teaching or suggestion the technical problem addressed by the claimed invention. As discussed above, unlike in the claimed invention, the compositions of Examples 6-7 (compositions of Klug et al.) are unable to produce foams under the same condition where CFC 11 forms fully expanded foams.

Nevertheless, it still appears to be alleged that it is of no matter whether Klug et al. concerns the technical problem address by the claimed invention, or whether the compositions of Klug et al. could have been used as CFC 11 substitutes, since those of ordinary skill in the art would have recognized compositions of Klug et al. as suitable for forming expanded foams having the same physical features as foams produced by CFC 11. However, the Declaration of Dr. Basile clearly demonstrates that this is not the case. It is stated at page 3 of the Office Action that it is presumed that those of ordinary skill in the art would make the necessary adaptations within the capabilities of the artisan in order to arrive at the desired results. Applicants note that this statement is so obscure as to be difficult to comment. Nevertheless, Applicants point out that if there is no teaching or suggestion with respect to the compositions of Klug et al. as substitutes for CFC 11, it is not clear in view of what (or even why) those of ordinary skill in the art would be motivated to make the necessary adaptations. Applicants thus submit that it is


only through ex-post facto analysis, with reference to the present application, that such statements may be made when viewing Klug et al. Of course, such ex-post facto analysis is impermissible and must be avoided. Accordingly, standing by itself, Klug et al. is unable to teach or suggest any invention as claimed.

Finally, Applicants wish to point out that it is not entirely clear what is meant by the statement at page 3 of the Office Action that failures by experimenters who have no interest in succeeding should not be accorded great weight. It would appear that the Patent Office doubts the results set forth in the Declaration. However, it is easily seen that the experimental design of the Declaration is quite strict (the same amount of each blowing agent is used) and that all compositions were treated under the same experimental conditions for the production of foam. Such conditions are those known in the art for producing foams. Accordingly, it is to be noted that the Declaration has been made with the best of care. If any doubts regarding the experiments of the Declaration remain, Applicants urge that such doubts be set forth in clear terms so that Applicants may respond as appropriate. Therefore, Applicants again urge that Klug et al. is unable to teach or suggest any invention as claimed, and request withdrawal of all rejections.

In light of the above remarks, Applicants respectfully urge that the application is in condition for allowance and request early notification to that effect.

In the event this paper is not considered to be timely filed, Applicants hereby petition for an appropriate extension of time. The fee for this extension may be charged to our Deposit Account No. 01-2300. The Commissioner is hereby authorized to charge any fee deficiency or credit any overpayment associated with this communication to Deposit Account No. 01-2300, referencing Attorney Docket No. 108910-09024.

Respectfully submitted,

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